DEPARTMENT OF THE NAVY
COMMANDER AMPHIBIOUS GROUP THREE
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COMPHIBGRUTHREEINST 4730.2A
N45
JUN [illegible]

COMPHIBGRU THREE INSTRUCTION 4730.2A

Subj: SHIPBOARD CRANE CERTIFICATION PROGRAM

Ref: (a) Naval Ship's Technical Manual (NSTM) Chapter 589

Encl: (1) Ship's Promulgating Directive Form
(2) Crane Certification Checklist
(3) Annual Crane Inspection

1. Purpose. To assist COMPHIBGRU THREE ships in establishing shipboard Crane Certification Program which meets NAVSEA requirements for crane operations as delineated in reference (a).

2. Cancellation. COMPHIBGRUTHREEINST 4730.2

3. Discussion.

a. Reference (a) establishes a basis for implementing and maintaining a Shipboard Crane Certification Program by identifying and consolidating the various operations, training, maintenance, testing, and inspection requirements for cranes under the cognizance of NAVSEA. The Crane Certification Program is intended to improve the reliability and safety of all shipboard cranes and provide the ship's Commanding Officer with a vehicle for verifying that the equipment is being operated, maintained, tested, and inspected in accordance with reference (a).

b. These requirements should be considered minimum standards and should not be construed as limiting the authority of a Commanding Officer to impose additional or more restrictive requirements.

3. Action. Ship Commanding Officers are to adopt this directive as the command's Shipboard Crane Certification Program. A ship's promulgating directive form (enclosure (1)) is provided. The Commanding Officer is authorized to modify this instruction where unique manning or requirements at his command precludes exact compliance.

4. Responsibilities.

a. The Commanding Officer is the certification authority for the ship's cranes. In this capacity, he will:

(1) Formally approve certifications, decertification, departures-from-specification, and recertification of shipboard cranes.

(2) Forward departure-from-specifications that require the approval of authorities external to the ship in accordance with reference (a).

(3) Designate in writing, officers to function as the Crane Officer, Test Directors, and the Crane Certifying Officer.

b. The Crane Officer is responsible to the Commanding Officer for the safe and reliable operation of all shipboard cranes. His duties include, but are not limit to:

(1) Administering the training and certification programs for shipboard cranes. In that capacity he shall:

(a) Schedule crane certification tests in accordance with periodic requirements.

(b) Coordinate internal and external actions necessary to conduct all tests.

(c) Maintain the crane certification envelope, in audit form in accordance with reference (a) para 6.4.1

(2) Recommend certifications, decertification, departure from-specifications, and recertification to the Commanding Officer and keep all records necessary to support these recommendations.

(3) Review all tests to be conducted by industrial activities to ensure all applicable procedures are compatible with the ship's cranes and meet the requirements of reference (a).

c. The Test Directors shall supervise crane inspections and no-load and load tests. The Test Director shall:

(1) Verify the technical competence of all test and inspection personnel.

(2) Witness and direct the testing.

(3) Ensure that all tests and inspections are properly performed.

(4) Report immediately to the Crane Officer and Crane Certifying Officer the results of any test or inspection that reveals deficiencies affecting the certification of a crane.

d. The Crane Certifying Officer is a ship's company officer not responsible for crane operations or maintenance. He is responsible to the Commanding Officer for monitoring the Crane Certification Program and shall perform the following functions:

(1) Conduct an annual audit of the Crane Certification Program for each installed crane.

(2) Concur in recommendations to the Commanding officer for crane certifications, departure-from-specifications, and recertification.

(3) Concur with corrective actions by the Crane Officer which are a result of a crane certification audit.

(4) Perform periodic checks, at random intervals between audits, of compliance with crane certification requirements.

(5) Witness precautions, prerequisites, and procedural steps associated with crane controlled assembly procedures in accordance with reference (a) sections 4 and 5.

5. Certification Process. The initial certification shall be established by the certification of crane material condition by the overhauling industrial activity and the satisfactory completion of the Crane Certification Checklist, enclosure (2).

a. The Crane Certification Cycle is the interval between overhaul cycles. When a ship's regular overhaul cycle extends beyond four years, arrangements will be made to perform load testing in accordance with reference (a) para 5.5.3 to ensure that the stipulated four year periodicity is not exceeded.

b. Annual Certification. A crane certification is valid for one year, unless a decertifying event occurs. The Annual Crane Certification Checklist, enclosure (2), shall be completed prior to the expiration of the specified cycle. Load tests need not be performed if expiration dates have not been exceeded.

c. Crane Audits

(1) The Crane Certifying officer shall conduct an annual audit of the Crane Certification Program for each installed crane.

(2) In accordance with reference (a) para 6.5.2, audits will be conducted on crane programs at a periodicity not to exceed 18 months. Commander, Naval Beach Group One is designated as the Type Commander sponsored technical team to conduct these audits on CPG-3 ships.

(3) Naval Beach Group ONE conducts the crane Certification Audit using Appendix F of reference (a) on each installed crane. Audit intervals in excess of 18 months, or an overall unsatisfactory finding by Naval Beach Group ONE during an audit, will result in decertification. The ship will contact Naval Beach Group ONE in sufficient time to schedule and perform the required audit prior to expiration of the 18 month certification cycle.

W. E. JEZIERSKI
Acting

Distribution:
COMPHIBGRUTHREEINST 5216.1U
Lists 1, 2 (less I, J, and K),
3, 4, 5 and 6

COMPHIBGRUTHREEINST 4730.2A

JUN 0 9 2005

USS_____( )
FLEET POST OFFICE
SAN FRANCISCO 966XX-XXXX

USS_____INSTRUCTION_____

SUBJ: SHIP'S PROMULGATING DIRECTIVE FORM

1. Purpose. To promulgate subject Program.

2. Cancellation. USS_____INSTRUCTION_____

3. Action. COMPHIBGRUTHREEINST 4730.2A is adopted and promulgated as a directive of this ship.

/s/_____Commanding Officer

Encl (1)

JUN 0 9 2005

CRANE CERTIFICATION CHECKLIST

From Control No._____ Sheet _____of _____
Ship _____ Date _____

Crane Designation: _____

1. Technical Manual_____(onboard: yes/no)

2. Special safety precautions in technical manual not otherwise covered by NSTM Chapter 589:

_____

3. Testing and Inspection Requirements for this crane*:
   a. Component Inspection -Annually

   b. No-load test -Annually

   c. ___% static load test every 4 years

   d. ___% dynamic load test every 4 years

   e. 100% rated load test every four years

*Unless special instructions of paragraph 589-5.9 apply, testing will be as follows:

150% static load test every 4 years
125% dynamic load test every four years
100% rated load test every four years

PERSONNEL	INITIALS
1. Crane crew organized, trained, and qualified in accordance with chapter 589 section 3.	_____
PMS	
1. MIP's and MRC's up to date in accordance with LOEP	_____

TECHNICAL MANUAL INITIALS

1. All changes incorporated in accordance with E-STEPS publication master _____

CRANE CERTIFICATION CHECKLIST

From Control No._____ Sheet _____of _____
Ship _____ Date _____

OPERATIONS	INITIALS
1. ODCL available, in-use and reviewed	_____
2 Safety precautions posted	_____
3. Ships motions and wind limits posted	_____
4. Design limitations posted	_____
5. Crane log available and up to date	_____

MATERIAL**	
1. Minimum safety features installed	_____
2. Required maintenance performed	_____

INSPECTION**	DATE	INITIALS
1. Required Inspection Performed		
a. Annual Component Inspection	_____	_____

TESTING		
1. Required Testing Performed		
a. Annual no load test	_____	_____
b. Static Load Test (performed at ___% within the last four years)	_____	_____
c. Dynamic Load Test (performed at ___% within the last four years)	_____	_____
d. 100% Rated Load Test (performed with last four years)	_____	_____

**If certification of material condition, inspection, or testing is provided by an industrial activity (such as, shipyard, SRF), identify the letter or document number and attach the pertinent correspondence:

Document No.

Material _____

Inspection _____

Testing _____

CRANE CERTIFICATION CHECKLIST

From Control No._____ Sheet _____of _____
Ship _____ Date _____

DEPARTURE FROM SPECIFICATION

a. List any outstanding deficiencies, including documentation of applicable departure from specification:

DEFIENCY	DEPARTURE APPROVAL	RESTRICTION

CERTIFICATION

a. Certification Recommended: _____
Crane Officer/Date

b. Concurrence in Recommendation: _____
Crane Certifying Officer/Date

c. Certification Approval: _____
Commanding Officer

d. Certification Expires: _____
(1 year from certification date: that is, CO's Signature)

ANNUAL CRANE INSPECTION

Equipment #_____ Date_____

Manufacturer's name_____

Capacity_____

The following inspection of crane components should be performed annually in conjunction with planning maintenance requirements. Refer to Crane Technical Manual _____for disassembly and reassembly instructions.

Designated critical components as per reference (a) para 5.4 shall have discrepancies corrected prior to crane recertification. Follow all instructions as outlined in NSTM Chap 589 (CRANES) and OPNAVINST 5100.19.

1. Inspect boom and masthead for:

    a. Broken and damaged parts
    b. Cracked, corroded, or missing members, including pendants.
    c. Loose fasteners, rivets, and bolts.
    d. Cracked welds
    e. Support pins, bushings, and retainers for:

        (1) Proper installation
        (2) Excessive wear and distortion
        (3) Proper lubrication

_____sat_____unsat_____
inspector

2. Inspect stowage cradle for:

    a. Broken or damaged parts
    b. Cracked, corroded, and missing members
    c. Loose fasteners, rivets, and bolts
    d. Crack welds

_____sat_____unsat_____
inspector

JUN 0 9 2005

3. Inspect pedestal and base supports for:
   a. Damage, cracking, corrosion
   b. Loose fasteners, rivets, and bolts
   c. Cracked welds

_____sat_____unsat_____
inspector

4. Inspect counter weights and counterweight support structure for:

   a. Corrosion
   b. Deterioration
   c. Loose or degraded fasteners

_____sat_____unsat_____
inspector

5. Inspect bumpers and stops for:
   a. Distortion, cracking, corrosion or excessive wear of spring bumpers.
   b. Cracked or broken seals, evidence of leakage of hydraulic or pneumatic bumpers
   c. Damage to bumper attachment bolts
   d. Broken, cracked, or excessively worn bumper pads and stops

_____sat_____ unsat_____
inspector

6. Inspect handrails, ladders, walkways, and personnel safety. Inspect for:

   a. Excessive wear of ladder rungs and steps
   b. Damage ladder rails
   c. Loose mounting connector
   d. Cracked welds
   e. Loose or missing rivets
   f. Deformed members
   g. Nonskid surface on foot walks
   h. Safety chains
   i. Ladder sleeves

g. Ladder cages
h. Ladder climbing safety devices
i. Other personnel safety guards as required

_____sat____unsat_____
inspector

7. Inspect machinery foundations for:

a. Distortion
b. Cracked welds
c. Misalignment
d. Corrosion

_____sat_____unsat_____
inspector

8. Inspect bolted connections for:

a. Proper mating of adjoining surfaces
b. Missing or defective components
c. Proper bearing surfaces of fasteners
d. Tightness of fasteners
e. Defective fasteners. (If one defective, inspect all in groups)

_____sat_____unsat_____
inspector

9. Inspect moving parts guards for:

a. Proper installation
b. Damage

_____sat_____unsat_____
inspector

10. Inspect lubrication lines and fittings (where installed) for:

a. Bent or crimped lines
b. Damaged or missing line fittings
c. Adequate lubrication to remove components

_____sat_____unsat_____
inspector

JUN 0 9 2005

11. Inspect enclosed spaces for:

a. Leaks
b. Corrosion

_____sat_____unsat_____
inspector

12. Ensure warning, cautions and label plates are posted in operator's cab, machinery house, and electrical house.

_____sat_____unsat_____
inspector

13. Inspect sheaves for:

a. Wear/ damage
b. Worn bearings and pins
c. Damaged and missing lubrication fittings
d. Wear in wire rope sheave grooves
e. Wear and corrosion of wire rope sections in contact with equalizer sheaves.
f. Adequate lubrication in remote sections
g. Loose or damaged sheaves guards

_____sat_____unsat_____
inspector

14. Inspect wire in accordance with NSTM Chap. 589 and Chap 613 (Fiber and Wire Rope rigging). Inspect for:

a. Broken wires
b. Wear
c. Corrosion
d. Slippage,wear,deformation or damage at fittings, sockets, and "waged end" connections.
e. Count the number of broken wires in each rope lay length and in each strand lay length.

_____sat_____ unsat_____
inspector

15. Measure wire rope in accordance with NSTM Chap. 613 (Fiber and Wire Rope Rigging)

Hoist Wire		Topping wire	
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

_____average _____average

_____sat_____ unsat_____
inspector

16. Inspect hoisting block for:

a. Cleanliness
b. Binding sheaves
c. Damaged or worn sheaves
d. Worn or distorted sheave pin
e. Broken bolts
f. Worn cheek weights

_____sat_____ unsat_____
inspector

17. Inspect hook for:

a. Damage
b. Excessive wear to the hook safety latch, hook swivel thrust collar and swivel securing nuts.
c. Damaged or missing lubrication fittings.
d. Proper lubrication
e. Cracks and gouges parallel to the hook contour
f. Cracks and gouges transverse to the hook contour
g. Visibly bent or twisted hook

_____sat____ unsat_____
inspector

JUN 0 9 2005

18. Inspect hook insulator links for:

    a. Cracked, excessively worn or corroded steel saddles
    b. Exposed or damaged fiberglass bands
    c. Permanent elongation
    d. Leakage current across link

_____sat_____ unsat_____
inspector

19. Inspect hoist shaft for:

    a. Damage
    b. Misalignment
    c. Worn keys or keyways
    d. Loose keys or covers

_____sat_____ unsat_____
inspector

20. Inspect hoist couplings for:

    a. Looseness
    b. Binding
    c. Evidence of leakage or cracks in sealed couplings
    d. Damage or corrosion in open couplings
    e. Check torque of coupling sheaves bolts (30 ft/lbs)

_____sat_____ unsat_____
inspector

21. Inspect hoist bearings and bushings for:

    a. Discoloration (due to excessive heat)
    b. Metallic particles, chips, or displaced metal
    c. Broken or distorted bearing retainers, or seals
    d. Adequate lubrication
    e. Tight bearing caps

_____sat_____ unsat_____
inspector

22. Take hoist brake pad measurements.

_____sat_____ unsat_____
inspector

23. Inspect topping shaft for:

a. Damage
b. Misalignment
c. Worn keys or keyways
d. Loose keys or covers

_____sat_____ unsat_____
inspector

24. Inspect topping couplings for:

a. Looseness
b. Binding
c. Evidence of leakage or cracks in seal coupling
d. Damage or corrosion in open coupling
e. Check torque of coupling sheave bolts (30 ft/lbs)

_____sat_____ unsat_____
inspector

25. Inspect topping bearings for:

a. Discoloration (due to excessive heat)
b. Broken or distorted bearing retainers, or seals
c. Adequate lubrication
d. Tight bearing caps

_____sat_____ unsat_____
inspector

26. Inspect topping brake for:

a. Smooth brake linings
b. Loose or worn parts
c. Unequal brake lining wear

_____sat_____ unsat_____
inspector

27. Inspect slew brake for:

a. Loose or worn parts
b. Missing or broken parts
c. Unequal brake lining wear
d. Dirt accumulation between pads
e. Solenoid air gap
_____acceptable, 1 and 5/16 - 1 and 1/2
(1) Overheating
(2) Worn or damaged air gap material
(3) Loose core lamination

_____sat_____ unsat_____
inspector

28. Inspect hoist gear box for:

a. Proper level of gear case lubrication
b. Leaking gaskets
c. Worn gears and shafting
d. Proper installation of bearing caps and/or covers
e. Clean vent lines or breather caps
f. Free ventilation of gear case

_____sat_____unsat_____
inspector

29. Inspect anti-slew device for:

a. Loose or damaged parts
b. Proper engagement
c. Missing parts

_____ sat____ unsat_____
inspector

30. Inspect bull and pinion gear of the slew system for:

a. Uneven wear of teeth (uneven bright metal pattern, pitting, flaking, or discoloration).
b. Adequate lubrication

_____sat_____unsat_____
inspector

31. Inspect hoist drum for:

a. Cracks or distortion
b. Missing or loose fasteners
c. Cracked welds
d. Worn or scored wire rope grooves
e. Worn shaft bearing
f. Proper lubrication
g. 2 1/2 turns remaining on drum with hook at it's lowest working point
h. Check tightness of cable end fitting

_____sat____unsat_____
inspector

32. Inspect topping drum for:

a. Cracks or distortion
b. Missing or loose fasteners
c. Cracked welds
d. Worn or scored wire rope grooves
e. Worn shaft bearing
f. Proper lubrication
g. 2 1/2 turns remaining on drum with hook at it's lowest working point
h. Check tightness of cable end fitting

_____sat_____ unsat_____
inspector

33. Inspect slew motor for:

a. Weather or moisture damage
b. Check commutators for:

(1) Pitting
(2) Burn spots
(3) Uneven wear

_____sat_____ unsat_____
inspector

JUN 0 9 2005

34. Inspect hoist motor for:

a. Weather or moisture damage
b. Check commutators for:
   (1) Pitting
   (2) Burn spots
   (3) Uneven wear sat unsat

_____sat_____ unsat_____
inspector

35. Check slew motor for:

a. Proper brush wear and tension, 2-2 1/2 lbs
b. Leads and insulators:
   (1) Fraying and cracked insulation
   (2) Loose wires and connections
c. Unusual operating noises
d. Loose hold down bolts
e. Bent shafts or covers
f. Proper lubrication

_____sat_____ unsat_____
inspector

36. Check hoist motor for:

a. Proper brush wear and tension, 2-2 1/2 lbs.
b. Leads and insulators:
   (1) Fraying and cracked insulation
   (2) Loose wires and connections
c. Unusual operating noises
d. Loose hold down bolts
e. Bent shafts or covers
f. Proper lubrication

37. Check topping motor for:

a. Proper brush wear and tension, 2-2 1/2 lbs
b. Leads and insulators:

(1) Fraying and cracked insulation
(2) Loose wires and connections

a. Unusual operating noises
b. Loose hold down bolts
c. Bent shafts or covers
d. Proper lubrication
e. Weather or moisture damage
f. Check commutators for:

(1) Pitting
(2) Burn spots
(3) Uneven wear

_____sat_____unsat_____
inspector

38. Inspect controllers for:

a. Broken, cracked, loose springs
b. Cracked and loose handles
c. Rough or burn contacts, points or segments
d. Evidence of excessive arcing
e. Worn or loose cams, pins, rollers, or chains
f. Fraying or cracked insulation
g. Loose connections
h. Identify label plates installed

_____sat_____unsat_____

39. Inspect brake coils for:

a. Proper electrical connections
b. Voltages:
_____Hoist
_____Luff
_____Slew
_____Travel

c. Coil resistance

_____sat_____ unsat_____
inspector

40. Inspect resistors and insulators for:

a. Damaged or loose connections, securing bolts, or brakes
b. Corrosion
c. High-resistance connections

_____sat_____unsat_____
inspector

41. Inspect panels, panel wires, relays, and connections for:

a. General condition of wires, relays, coils, and protection devices:

(1) Deterioration
(2) Cracked or fraying insulation
(3) Loose wire connections

*NOTE: If a megger is to be used, verify that its use will not damage circuits prior to performing ground checks.

b. Ground circuits
c. Operation of relays, coils, and protection devices
d. Cable tag and identification labels on wires and relays
e. Contacts:

(1) Proper alignment
(2) Signs of excessive heating and arcing

f. Coil and contact leads, shunts, and wiring

g. Loose connections or signs of overheating in fuses, or other overload protection devices.

h. General conditions of electrical panels:

(1) Deterioration
(2) Corrosion
(3) Loose components of fasteners
(4) Missing label plates

i. No cracks or excessive wear in the rubber matting (on the deck in front of panels).

j. Panel boards and arc shields:

(1) Cracked or loose securing bolts
(2) Dirt or moisture

_____sat_____ unsat_____
inspector

42. Inspect collector assembly (on traveling or rotating cranes) for:

a. Center collector assemblies:
(1) Loose or bent support
(2) Broken wires or tubing
(3) Loose connections
(4) Worn brushes
(5) Fraying insulation

b. Collector ring:
(1) Alignment
(2) Proper spring tension

_____sat_____ unsat_____
inspector

43. Inspect limit switches: contacts, springs, ratchets, pins, arms, and insulators, rollers, chains, cams, and dogs for:

a. Deterioration
b. Corrosion
c. Excessive wear

_____sat_____ unsat_____
inspector

JUN 0 9 2005

45. Inspect cover gaskets, counterweights, control weights, suspension guides, wiring, and mountings for:

a. Deterioration
b. Loose connections

_____sat_____ unsat_____
inspector

46. Inspect associated wiring, connections, and control switches for the horns, bells, lights, or other electrical and mechanical warning devices for:

a. Deterioration
b. Loose connections

_____sat_____ unsat_____
inspector

47. Inspect fixtures, mountings, linkage, pins, springs, and bell hammers for excessive wear.

_____sat_____ unsat_____
inspector

48. Inspect light fixtures for:

a. Cracks
b. Missing globes
c. Properly positioned floodlights (for adequate illumination of the under hook work areas.

____sat_____ unsat_____
inspector

49. Inspect operators cab for:

a. Leaks
b. Broken glass
c. Corrosion
d. Proper door and window operation
e. Cleanliness of cab and louvers

_____sat_____ unsat_____
inspector

50. Inspect heater and ventilation system for:

a. Proper cleanliness
b. Damage to fans, ducts, dampers, switches, and wiring

_____sat_____ unsat_____
inspector

51. Inspect diesel engines cooling system hoses, thermostat and pump for:

a. Hose
   (1) Cracks
   (2) Leaks
b. Clamp tightness
c. Radiator (leaks or obstructed cooling channels)
d. Proper shutter operation
e. Adequate anti-freeze
f. Water pump
   (1) Unusual noise
   (2) Leaking seals

_____sat_____unsat_____
inspector

52. Inspect lube oil lines and lube oil pressure for:
a. Lube oil lines:
   (1) Loose connections
   (2) Leakage
   (3) Damage
b. Gauges (for proper lube oil pressure)
c. Serviced or replaced filters and strainers

____sat____ unsat_____
inspector

53. Inspect fuel oil lines for:

a. Loose connections
b. Leakage
c. Damage

_____sat_____ unsat_____
inspector

54. Inspect drive belts on fan and alternator for:

a. Proper belt tension
b. Wear or deterioration

_____sat_____ unsat_____
inspector

55. Inspect oil, fuel, temperature, ammeter, tachometer, and hour meter gages for:

a. Proper shielding and mounting
b. Identification and legibility
c. Operating condition
d. Loose electrical or mechanical connections
e. Calibration date of ammeter, fuel, oil, temperature

_____sat_____ unsat_____
inspector

56. Inspect supercharger and drive for:

a. Wear
b. Loose mounting bolts or parts
c. Wear or external drive shaft and coupling

_____sat_____ unsat_____
inspector

57. Inspect engine wiring, all battery wiring to lights, warning devices and meter connections for:

a. Cracks
b. Fraying or peeling connections
c. Deterioration

_____sat_____unsat_____
inspector

Remarks:

_____
_____
_____

Crane Supervisor _____

Crane Division Officer _____

Crane Officer _____